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## ABSTRACT

Myth is integral to modern as well as ancient societies in its service to multiple interrelated social functions. Among these are to explain phenomena and direct action, to justify particular interests or practices, to dramatize ideals, and to provide cultural cohesion. Three prevailing myths that are especially problematic are the myths of thinking skills, the right answer, and stages/styles of cognition and learning. The purpose of this paper is to explain the appeal of these myths, the assumption being that such understanding can prompt the modification of old myths or the creation of new ones more compatible with the professed goals of schooling in democratic states, for example, to promote the acquisition of valued knowledge, and to contribute to social justice. Related to the abstract quality and scientific veneer of modern myth is the appearance of universalism. What is created is decontextualized and made to seem universal. The myth of thinking skills can be seen as a manifestation of a western middle class world view and psychology made to appear universal. Myth is perpetuated in part because it supports the political, economic, or cultural interests of groups that are dominant in the larger society, justifying what might otherwise be viewed as discriminatory practices. Not all myths are pernicious, however, and since myth is integral to social life, what is needed is a reconstruction of both myth and curriculum, a process that requires moving beyond prevailing conceptions to consider and create alternatives. A 7-page reference list is appended. (BZ)

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## THE PERSISTENCE OF MYTH IN CURRICULUM DISCOURSE

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**THE PERSISTENCE OF MYTH IN CURRICULUM DISCOURSE**

Myth is integral to modern as well as ancient societies. In contemporary curriculum and school discourse, it is not uncommon to find disparaging reference to this or that as myth, as if the label were sufficient to discredit the belief and accompanying practice by associating them with times past, fantasy, or false consciousness. Yet, they persist, both shaping and reflecting school practice. Of particular interest here is the holding power of myth. How might we account for the persistence of myth in curriculum discourse and practice?

After briefly examining the sociohistorical nature and role of myth, I draw on earlier work (Cornbleth, 1985a) to sketch three prevailing myths that I find especially problematic. They are the myths of thinking skills, the right answer, and stages and styles of cognition and learning. Although primarily associated with curriculum and schooling, these myths can be seen as manifestations of more encompassing themes in U.S. culture and its institutions, related to what Berger, Berger, and Kellner (1973) call modern technological consciousness. Against this background, I then explore the persistence of these myths in curriculum discourse with a focus on the social function of myth. My purpose is to explain their appeal, the assumption being that such understanding can prompt the modification of old myths or the creation of new ones more compatible with the professed goals of schooling in

democratic states, for example, to promote the acquisition of valued knowledge and to contribute to social justice.

Those who would reform curriculum might well attempt to better understand what is to be reformed, how it came to be, and why it persists (Reid, 1978). That understanding necessitates probing beneath surface appearances and questioning the prevailing language, assumptions, and practices, including sustaining myths. Making problematic what has been taken-for-granted in curriculum creates possibilities for reform.

#### From True Stories to Scientific Fables

Myth is a widely held belief with tenuous connection to pertinent evidence or circumstance. Sometimes myth is elaborated as a theory or story, sometimes it is simplified as a proverb or slogan. In ancient societies, myths were "true" stories about historical origins as distinguished from false stories or legends (Eliade, 1963). Today, we tend to think of myth as false belief and to assume that we have rid ourselves of such vestiges of a prescientific age. All cultures, however, have their guiding myths although we may not think of our own myths as such (Lakoff & Johnson, 1980). Like the ancients, we see these beliefs as "truths" -- as common sense, empirically established fact, or natural law (Toulmin, 1982). Myth is an integral, often unexamined part of contemporary culture, including curriculum discourse.

Ancient myths were historical and particularistic, a rich

narrative of "real" events in times past. Most often, they concerned the role of supernatural beings in creating or bringing about events and institutions. The history sustained through myth was considered sacred because it was the work of supernaturals. The myths provided models for human behavior and gave "meaning and value to life" (Eliade, 1963, p. 2). In primitive societies, according to Malinowski (1926, p. 19),

myth expresses, enhances, and codifies belief; it safeguards and enforces morality; it vouches for the efficiency of ritual and contains practical rules for the guidance of man. Myth is thus a vital ingredient of human civilization; it is not an idle role, but a hard-worked active force.

Knowing the myths of one's culture also carried social and political import insofar as knowledge of the myths meant knowing about the origins of phenomena and thus having control over them.

Modern myths, in contrast, tend to be abstract and transhistorical, general principles of learning, for example.<sup>1</sup> Through repetition and reification, the abstraction then comes to be treated as "real" or natural (see, e.g., Barthes, 1957/1972; Berger & Pullberg, 1965). Psychological principles of learning become the way people learn or learning itself, and students who do not observe these principles are typically considered deficient or recalcitrant. In some instances, myths can become self-fulfilling

as when the presumably deficient or recalcitrant student is treated as such and begins to respond in kind, thus confirming the teacher's expectation and perpetuating both the myth and "non-learning."

A number of contemporary myths seem to have their origins in descriptive or explanatory metaphors, that is, in efforts to understand new or puzzling phenomena in terms of other, more familiar ones (on metaphor in everyday life, see Lakoff & Johnson, 1980). Problems arise when metaphors (e.g., the mind is a machine) are taken literally and thus turned into myth (Hesse, 1980). Conceptualizing the mind in terms of a machine, for example, makes the non-observable phenomenon manageable and offers a heuristic for further inquiry. While highlighting some aspects of mind, the machine metaphor obscures others. To treat the mind as if it were a machine is to abuse the metaphor and distort the concept of mind. It is to engage in reification and consequent mystification, which yield conceptual absurdity and similarly absurd and often dehumanizing practice. An irony of such reification is that something that has been reified (e.g., the machine mind) cannot exist on its own as an entity apart from the human activity that created and maintains it (Berger & Pullberg, 1965); yet, we often act as though necessarily constrained by our own creations. The mythic reification of belief and accompanying practice is a

prevalent but not inevitable aspect of human existence and institutions.

The abstractions and metaphors that give rise to myth in modern society tend to be distinguished by claims to a scientific character. Claiming a basis in science is intended to, and often does, bestow legitimacy given the awe with which science is held in contemporary Western societies. Scientific myths, according to Toulmin (1982), are created when scientific concepts or scientifically obtained data are employed for other than scientific purposes or to answer non-scientific questions. They often result from overinterpretation such as generalization beyond the bounds of available data. The link with science, however strained, lends an aura of authority. A prime example is the belief in some kind of social or cultural evolution. Another is the assumption that observed right-left brain differences should be accommodated in curriculum. To identify differences does not mean, in any scientific sense, that they should be responded to in general or in any particular way.

Related to the abstract quality and scientific veneer of modern myth is the appearance of universalism. What is created in particular social and historical circumstances is decontextualized and made to seem universal. Myth "transforms history into nature" (Barthes, 1957/1972, p. 129), thus "giving an historical intention a natural justification, and making contingency appear eternal" (p.

142). For example, bourgeois representations and "relations between man and the world" have become "'normalized' forms" such that "bourgeois norms are experienced as the evident laws of a natural order" (Barthes, 1957/1972, p. 140). Psychological constructs (e.g., learning, skill) have been similarly decontextualized and made to seem universal and natural. The myth of thinking skills, for example, can be seen as a manifestation of a Western middle class world view and psychology made to appear universal.

Myth serves multiple, interrelated social functions. Among these are to explain phenomena and direct action, to justify particular interests or practices, to dramatize ideals, and to provide cultural cohesion. Myth offers both description and prescription, an account of things and a model for action, be it a myth of rainmaking or a myth of stages and styles. Even when expectations remain unfulfilled, the myth and associated practices tend to prevail. We are, perhaps unavoidably, creatures of myth insofar as human experience encompasses much that cannot be explained by other means.

The justification function of myth is closely related to its explanatory role. To explain and direct action not only makes something plausible but also legitimates it. The myth of stages and styles, for example, is seen as explaining observed differences among individuals and calling for differentiated treatment of

students. Different learning opportunities and outcomes are thus justified by the myth. (That the myth labels more than it explains and diverts attention from efforts to teach "slow" or otherwise "different" students is considered in the next section.)

Justification of particular interests or practices via myth also serves to obscure or mask others. The individual focus of the stages and styles myth, for example, deflects attention from the influence of culture and social structure on individuality.

Myths also serve as ideals that orient a culture. For example, in the United States, "We hold these truths to be self-evident: that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these . . ." Myth thus inspires and guides individual and collective action.

Finally, myth provides cultural cohesion. By offering meaning, legitimacy, and ideals, myth perpetuates a shared corpus of belief and thus provides a reassuring degree of security. That myth seems to be pervasive and indispensable to society, however, ought not lead to unquestioning acceptance of particular myths as inevitable. Just as myth is socially constructed, so it can be reconstructed.

### Illustrative Myths<sup>2</sup>

The three myths examined here reflect and contribute to the pervasiveness of technological consciousness in curriculum

discourse and practice. The myths of thinking skills, the right answer, and stages and styles are powerful, widely held, and held sacred by many educators and laypersons alike. They have come to be promoted by experts and institutionalized in curriculum and schooling. Yet, in one way or another, they contradict democratic ideals such as equity and enlightenment or subvert attempts to realize them.

#### The Myth of Thinking Skills

This is a double-barrelled myth, one part of which asserts that thinking is composed of a number of discrete cognitive skills or steps. The second asserts that these skills or steps are content-free or generic. Together, they direct us to teach "thinking skills" apart from thinking and subject matter as can be seen in curriculum and methods texts that offer separate skill development chapters and teaching sequences with little or no attention to their integration or relation to subject matter. The problems of the first part of this myth are largely conceptual; the weaknesses of the second are both conceptual and empirical.

Skill A + B + C = thinking. There are at least three interrelated problems with the position that thinking consists of the sum of any list of skills or steps. One is that, without being offered some conception of the nature of thought, we cannot tell whether the skills or steps might add up to thinking or something else or nothing at all. A second is that lists and steps imply

that thinking is or should be linear, which it rarely if ever is or could be. Instead, thinking tends to be recursive. A sequence of skills or steps is not a logic-in-use but a reconstructed logic (Kaplan, 1964) that misrepresents what occurs while one is thinking. It also ignores the dispositional quality of thought.

The third and more serious problem concerns the reductionist assumption that thinking can be cut into pieces and reassembled without damage. This reductionist assumption destroys the substance and spirit of thought; you cannot dissect a live frog. Further, when thinking is conceived as raising and pursuing questions about the ideas one encounters, the questions raised and the means needed to pursue them will depend to a large extent on the situation, including the ideas encountered, the social context of the encounter, and the prior knowledge and values of the questioner. Even given a general orientation or disposition to think critically, particular aspects of thinking are situation dependent and cannot be predetermined or specified out of context (see Mishler, 1979).

If thinking consisted of a number of skills or a series of steps, one might expect considerable agreement as to the constituent skills or steps. However, there appears to be little or no such agreement; there is not even consensus as to what constitutes a skill (Beyer, 1984a). One might also expect that students who had mastered a given set of skills would demonstrate

sound thinking. To my knowledge, however, there is no such evidence. Students who have mastered one or another skill have done just that. It does not necessarily follow that the skills will result in or be used in the service of thinking. It is also conceivable that preoccupation with skills might dull one's critical capacity.

No list of skills is either necessary or sufficient for thinking. Any or all possible skills, however, may contribute to thinking in a given case. This position is similar to Dewey's (1910/1933) description of the interdependent phases of reflective thought as dependent on, but not equivalent to, diverse skills such as observation and inference.

Thinking cannot be reduced to a universally applicable formula of skills or steps to follow except by conceptual or empirical alchemy. The seeming rationality of specifying thinking skills and sequencing them in a logical or psychological order for instruction is appealing. But that rationality is illusory. Analytically distinguishable elements are interdependent in practice, and logical or psychological order bears little resemblance to the organization of practice. Despite claims to the contrary (e.g., Beyer, 1984b), there is no reason or evidence to expect that further efforts to specify and sequence supposedly generic skills will be any more productive than previous ones.

Drawing on Aristotle, Wiggins (1978) makes a similar case with

respect to "practical reasoning." According to Aristotle, "the openness, indefiniteness and unforeseeability of the subject matter of praxis" resists codification. Wiggins suggests that those who seek "a system of rules" hope "to spare themselves some of the agony of thinking and all of the torment of feeling and understanding that is actually involved in reasoned deliberation" (p. 150). From a psychological perspective, Shulman and Carey (1984) have also argued against reductionism and the assumption of universality with respect to reasoning and rationality. Formulaic approaches to reasoning and thinking are increasingly eschewed in both philosophical and psychological work (see McPeck, 1981 for a particularly detailed and devastating critique).

Skills and strategies are content independent. This second part of the myth of thinking skills follows from the first. If thinking consists of a number of skills, the underlying assumption is that these skills are independent of the subject matter content to which they might be addressed. Thinking skills and strategies (patterned combinations of skills) are assumed to be knowledge free or generic and transferable from one situation to another. However, the evidence regarding transfer is mixed at best (e.g., Belmont & Butterfield, 1977). There is no "set of supervening skills" that can replace substantive knowledge of the field in question.

Increasing evidence indicates that the development of thinking

and associated skills is highly knowledge dependent (Glaser, 1983; Greeno, 1980; Voss, in press). In other words, we cannot think about ideas we encounter unless we know something about the area in question. With the possible exception of metacognition, skills that contribute to thinking tend to be domain specific.

The conceptual argument for the domain specificity of thinking is well presented by McPeck (1981), drawing particularly on the earlier work of Toulmin (1958). The knowledge in which thinking is embedded is more than empirical and conceptual. The various fields of knowledge have different logics or modes of reasoning. While not mutually exclusive, the standards of judgment for what counts as sound knowledge and argument differ from one subject area to another. What constitutes good reason and evidence for belief in history differs from that in economics, law, and chemistry. "Just as there are different kinds of knowledge, so there are different kinds of reasons, evidence, and modes of justifying them" (McPeck, 1981, p. 23). The domain knowledge that is crucial to thinking is procedural and normative as well as empirical and conceptual. Consequently, the separation of subject matter content and thinking process is arbitrary and misleading.

Because each area of knowledge has its own distinctive logic, the criteria or expectations for thinking vary from one to another. The legitimacy of these differences has been well argued by Toulmin (1958). Toulmin's additional argument that the natural sciences

are distinguished "not by the types of objects with which they deal, but rather by the questions which arise about them" (1977, p. 149) seems equally apropos of the social sciences. There are also intra-field differences in questions raised and acceptable grounds for belief such as those between behavioral and cognitive psychology. The differences in questions raised and means of pursuit between and within fields point to a further distinction that cuts across subject matter or disciplinary boundaries. This is the paradigmatic distinction. A paradigm is a world view or framework of knowledge and belief through which we "see" and investigate the world. Scientific paradigms consist of working assumptions about the world and how it is to be studied, understood, and acted upon, i.e., interrelated concepts and values, questions, procedures, and actions. Commitment to a particular scientific paradigm involves affiliation with a community of scholars who share, sustain, and shape the paradigm.

Thinking, then, varies with the domain investigated and the paradigm adopted. To argue that thinking is neither absolute nor universal is not to suggest that it is either idiosyncratic or individual. Thinking is a social as well as a cognitive activity, shaped by the setting and the norms of the community in which it occurs, e.g., Marxist, empirical-analytic. The complexity and pluralism of the knowledge underlying thinking renders generic thinking skills illogical and impotent.

The empirical evidence for the domain specificity of critical thinking and associated skills and strategies comes largely from recent studies of reasoning and problem solving in math, science, and social science. (Glaser (1983) and Voss (in press) provide excellent reviews.) The conclusion to be drawn from this research is that while general skills and strategies can be identified, they are relatively weak and useful only when one does not know much about the field or problem in question.

As inferred cognitive or intellectual processes, skills are important to thinking but not a proxy for thought. By misrepresenting thinking, the "skill A + B + C" part of the myth of thinking skills tends to mislead curriculum designers, teachers, and teacher educators into psychologizing thought and teaching skills in lieu of thinking. The generic part of the myth tends to further mislead by focusing attention and effort on weak rather than strong skills and strategies. Yet, the myth persists as evidenced by the attention to thinking skills in many curriculum and methods texts and the numerous generic thinking skills materials for classroom use.

#### The Myth of the Right Answer

According to this myth, a correct student response to a teacher or textbook question is evidence of student thought and learning. Right answers are sought by teachers and rewarded with praise and points that add up to good grades. They tend to be

valued regardless of the question or the means by which students produce them. Right answers do not necessarily demonstrate student learning. Students may just be repeating what they already know. Nor do right answers necessarily demonstrate subject matter knowledge or thought. They may just be the result of a lucky guess, figuring out "what the teacher wants," or other survival strategies (see Anderson, Brubaker, Alleman-Brooks, and Duffy, 1984).

The right answers that are valued by this myth are typically answers to simple knowledge recall or memory questions. The myth of the right answer tends to encourage rote memorization rather than thinking things through. Rote memorization can also be seen as a myth. The memorization myth asserts that information must be acquired (i.e., memorized) before one can use it for thinking or other purposes and that rote memorization is an effective means of information acquisition. Learning by rote refers to rehearsal, drill, or "saying it over," none of which necessarily involve knowledge comprehension, integration, or application. Once again, the evidence does not support the claim. Instead, we find that rote memorization is usually an inefficient means of information acquisition and that it does not provide a functional knowledge base for further thought (e.g., Simon, 1980) or action.

How information is elaborated and organized in memory appears to affect its accessibility and usefulness. Rote elaboration

strategies do not foster the organization and integration of information that enables retrieval and use in new situations. According to Simon (1980, p. 87), "rote memorization, as we all know too well, produces the ability to repeat back the memorized material but not to use it in solving problems." The same applies to concepts, procedures, and other kinds of knowledge. Unless they are appropriately interrelated in memory, they are not likely to be useful to critical or other thinking (Norman, Gentner, & Stevens, 1976). Thus, the myth of the right answer and rote memorization fosters an illusion of knowing that subverts construction of a functional knowledge base.

#### The Myth of Stages and Styles

This, also, is a composite myth, encompassing various beliefs about the existence and implications of stages of cognitive development and styles of cognition or learning. Whereas stages usually refer to presumed abilities of one sort or another, styles usually refer to preferred modes of information processing or learning, i.e., cognitive and learning styles. There are similar problems with stage and style forms of differentiation and categorization of students. Both tend to have a negative effect on expectations regarding students' ability or disposition to learn and their "readiness" to develop desired knowledge or reasoning skills. They might also negatively affect expectations regarding whether and how something can be taught. For example, if critical

thinking is assumed to be dependent on having reached the formal operations stage in Piaget's hierarchy, then one would not expect students assigned to the concrete operations stage to be capable of critical thought or of learning how to think critically.

There seems to be a "catch-22" in this line of reasoning that limits the possibilities of teaching and learning. If students have reached the appropriate stage, they can do it, and either could benefit from instruction or do not need it; if not, they cannot do it, and are not "ready" to be taught. Yet, there is evidence of instruction "bringing children who were not even on the verge of acquiring a particular logical form of thought to complete mastery of tasks that supposedly require that form of thought" (Case, 1981, p. 144).

Beyond questions of teaching and learning, there are questions about the consistency of developmental stages, specifically the assumption that an individual at a particular stage functions at that level across tasks and subject areas. According to this interpretation of stage theory, one would not be at a formal operational level in one domain, say history, and at a concrete operational level in another, say mechanics. The empirical evidence, however, is to the contrary: "careful reviews of the research literature do not support the picture of homogeneity of cognitive activities at particular ages assumed by the Piagetian

stage model" (Estes, 1978, p. 13; also see Case, 1981; Mandler, 1983).

Task-relevant knowledge rather than developmental stage or capability may better explain identified age-related differences in students' reasoning (Chi, 1983; Chi & Glaser, 1983; Ortony, 1980). For example, how well students categorize a given set of items depends not simply on their stage of development or "categorizing ability," but also on their knowledge of the items and the kinds of categories into which they might be sorted (Chi, 1983). Ortony (1980) suggests a similar interpretation of studies of children's comprehension of metaphor, many of which did not control for "world-knowledge." Prior content knowledge is also important to problem-solving. Whether and how a problem is solved is dependent on the knowledge one brings to the situation (Chi & Glaser, 1983). In sum, it increasingly appears that "changes in such [domain] knowledge may underlie other changes previously attributed to the growth of capabilities and strategies" (Siegler & Richards, 1982, p. 930).

As with the stages myth, there are contrary data and alternative explanations of observed differences attributed to cognitive or learning style. A major challenge comes from studies showing that styles are context-dependent, i.e., they vary with the learning task (e.g., Laurillard, 1979). Given more than one kind of task, students demonstrate more than one style. Interestingly,

many studies purporting to show individual differences in cognitive or learning style employed only one task or kind of task. There was no opportunity for students to demonstrate task-related differences. So-called style seems to be less an inherent characteristic of individuals than a function of contextual factors such as the nature of the task, subject matter content, teaching mode, and expected kind of test. The evidence strongly indicates that identifiable styles do not exist in the individual, but, if at all, in the interaction of individual and situation (e.g., McConkie, 1977).

Stages can be imposed on anything that changes over time; styles can be imposed on anything that varies. The danger in categorizing students according to their presumed developmental level or their presumed learning or cognitive style is twofold. It lies both in the category labels and in the school practices that are based on such labelling. First, the labels are neither neutral nor helpful to teaching or learning. Not only do they obscure the individual, but they tend to be explanatory fictions whose undesirable social consequences have been well noted (e.g., Apple, 1975). Pedagogical consequences include negative teacher expectations for many students and the formal or informal tracking of students with the concomitant denial of opportunity to those students deemed unready or incapable of certain kinds of learning.

Curriculum discourse incorporates and perpetuates the myths of

stages and styles as evidenced in texts and methods courses. Instead of assuming that students are "this way" or "that way" as an inevitable consequence of their inherent cognitive or learning style, consider the possibility that they have or have not learned to approach given tasks in particular ways. If students have not yet developed the requisite knowledge and reasoning skills for critical thinking, for example, then opportunity and instruction should be provided, not denied.

#### From Skill in Thinking to Thinking Skills

Examining the emergence of the myth of thinking skills and its incorporation in curriculum discourse and practice in historical context is intended to serve two purposes. One is to illustrate how myth comes into being in professional education discourse. Consideration of historical context also illustrates how education myths are related to broader cultural themes. What follows is, necessarily, a partial and retrospective account. Although it is neither comprehensive nor causal, it can be seen as plausible and suggestive of further lines of inquiry.

The language of thinking skills and its underlying assumptions are commonplace in contemporary curriculum discourse. Exceptions include some of the philosophically oriented literature and discourse within a critical perspective. These exceptions have been overshadowed by the predominantly psychological and technical orientation of curriculum. This psychological orientation,

behavioral and now increasingly cognitive, together with the social efficiency and scientific management movements earlier in this century, and the anti-intellectualism that has characterized U.S. history and society for more than two centuries, seem to have been major factors in the transformation of skill in thinking to thinking skills.

At the turn of the century, the language was one of skilled performance where skill referred to proficiency at a task, usually a physical activity that was seen as practical or useful, e.g., the skilled worker. By the 1920s, there is reference to skill subjects such as reading, arithmetic, and writing, which were earlier called "common branches" and later became "basic skills." It is not until the 1950s that intellectual activity and thought are referred to as skills, i.e., thinking skills. The 1940s appear to have been a decade of transition and the 1950s one of consolidation such that by the 1960s thinking skills were largely taken-for-granted.

Since the 1920s, social efficiency by means of "scientific management" has been a watchword of U.S. schooling (Callahan, 1962). The 1980s language of excellence and effectiveness can be seen as a restatement of the social efficiency theme. It is assumed that measurably effective teaching and schooling practices can be identified and implemented to yield more and better informed individuals who, collectively, will strengthen and improve society at large.

Key features of the scientific management that is to provide efficiency have been measurement and task analysis. Earlier in this century, measurement took the form of individual aptitude and achievement tests, teacher rating scales, and school surveys, resulting in what Rugg decried as "an orgy of tabulation" (1926, p. 71). Subsequently, these measurement forms have been augmented by behavioral observation and quantification and extended by sophisticated computers that make feasible larger data bases and more complex analyses. Measurement was to enable determination of efficiency and, later, accountability such that less efficient practices could be identified and eliminated in favor of more efficient ones.

Psychometric technology demanded what became known as task analysis, that is, the decomposition of complex acts into presumably discrete elements amenable to quantification (cf. Frederiksen, 1984). Task analysis also contributed to scientific management by facilitating the prespecification and control of curriculum and teaching that was to enhance efficiency. It was not only assumed that tasks such as reading and thinking and teaching could be meaningfully decomposed, but also that the identified elements could be best taught and learned one at a time and then assembled to create the desired whole.

Illustrative of these assumptions and practices is the curriculum work of Bobbitt, Charters, and later Tyler, a student of

Charters. Bobbitt, a leading advocate of scientific management in education, and Charters adopted a task analysis approach to curriculum construction. For example, in his 1918 The Curriculum and 1924 How to Make a Curriculum, Bobbitt emphasized the precise specification of "particularized" objectives derived from activity analysis as the central task of curriculum construction. Appropriate learning experiences and means of evaluation, he believed, would routinely follow from such analysis and specification. The "Tyler rationale" with its "production model" of teaching and learning (Kliebard, 1975, p. 45) and behavioral objectives can be seen as an extension of this earlier work as can more recent technocratic conceptions and "rational management" models of curriculum construction (Cornbleth, 1985b).

Thus, the demands of curriculum, teaching, and particularly evaluation for specification of what was to be taught, learned, and measured strongly influenced the redefinition of skill in thinking to thinking skills. It is more difficult to observe and measure thinking or its products, for example, than one's response to a multiple-choice test item that purports to measure a component element or skill such as determining whether a conclusion logically follows from given premises (cf. Dressel & Mayhew, 1954; Smith & Tyler, 1942). Reporting on the Cooperative Study of Evaluation in General Education, Dressel and Mayhew noted that available definitions of critical thinking

all proved too abstract for evaluation or teaching purposes. The only recourse was to define critical thinking as the sum of certain rather specific behaviors which could be described and which could be inferred from student acts. (1954, p. 37)

By the 1950s, "the only recourse" was to cast thinking as skills in order to satisfy psychometric demands.<sup>3</sup>

Decomposition of thought into skills occurred in a political context of demands for accountability and efficiency, supported by psychologists and professional measurement specialists who promised the desired data and outcomes. This context seems to have been forgotten while thinking as skills has come to be taken-for-granted as the correct interpretation or the natural state of affairs. The decontextualization of the transformation and the subsequent recontextualization of thinking as skills in curriculum discourse tends to obscure the political and professional interests that contributed to and continue to benefit from the transformation (e.g., standardized test developers and publishers, education policymakers).

In addition to the psychologizing of education evident in the measurement and task analysis efforts associated with social efficiency and scientific management, the pervasive anti-intellectualism of American society contributed to the redefinition

of thinking as skills. While Americans traditionally have been anti-intellectual (Hofstadter, 1963), being skillful has been an integral part of American traditions and values. Skill is useful and practical and therefore highly valued in the American context. Intelligence and thought have gained acceptance in this milieu in part by transformation to a collection of skills. Making the intellectual technical has made it acceptable. Thinking as skills is manageable; it is compatible with prevailing values and functional within curriculum and schooling. The skills language implies the utility of thinking. Not only are skills socially useful, but they can be specified in ways that enable their sequential arrangement for teaching and learning and their measurement for purposes of efficiency. A psychological construct, skills, thus became a pedagogical imperative. Taking the skills construct literally, as if thinking skills were "real," reified an abstraction and contributed to the creation of a myth with considerable holding power.

The myth of thinking skills entered into curriculum through the medium of professional discourse. Journals, books, and school materials can be seen to gradually adopt the skills language and assumptions. For example, in 1940, the National Council for the Social Studies (NCSS) published a bulletin entitled Selected Items for the Testing of Study Skills. In 1957, a third edition was published as Selected Items for the Testing of Study Skills and

Critical Thinking (Morse & McCune, 1957). In their preface, the authors noted increased attention to the teaching and testing of critical thinking since the American Council on Education's Cooperative Study of Evaluation in General Education, 1950-53 (Dressel & Mayhew, 1954) and the twenty-fourth NCSS yearbook, Skills in Social Studies (Carpenter, 1953). The language of the 1957 edition is mixed with respect to thinking and skills. One finds reference to the "skill of thinking critically and clearly" (p. 3), "critical skills" (p. 8), and "skills of critical-mindedness" (p. 25). With the fifth edition (Morse, McCune, Brown, & Cook, 1971), the language is unequivocally the language of critical thinking skills. The multiple editions of this bulletin indicate its wide appeal and potential impact on curriculum and testing in social studies education. The changing language can be seen as reflecting changes in the larger education community and responding to compelling social mandates.

#### Myth Persistence

Examination of how the myth of thinking skills came into being and entered into curriculum discourse is suggestive of reasons why such myths persist despite contrary evidence, alternative interpretations, and abuse in practice that contradicts professed goals of schooling. One is that myth becomes such an integral part of day-to-day activities that it is taken-for-granted. No longer seen or heard, it is unlikely to be questioned, challenged, or

changed. A second, related reason for the appeal and persistence of a particular myth is its congruence with broader cultural themes or aspects of consciousness. Such myths "make sense" in their cultural context and may be either taken-for-granted or overtly cherished. Further reasons for myth persistence to be considered here are related to the social functions of myth noted earlier: to explain phenomena and direct action, to justify particular interests or practices, to dramatize ideals, and to provide cultural cohesion.

Like the myth of thinking skills, the myths of the right answer and stages and styles have become integral to curriculum language and activity. These beliefs and their accompanying practices are so taken-for-granted that many educators would be astonished to find them questioned and cast as myth. The embeddedness of myth in daily practice renders it barely visible. The visibility of myth is further diminished to the extent that the myth is congruent with overarching aspects of consciousness.

Berger et al.'s (1973) conceptualization of modern consciousness is helpful to integrating and understanding these reasons for the persistence of myth. The three myths of concern here can be seen as manifestations of a particularly modern consciousness whose primary sources and carriers are technological production and political bureaucracy. Berger et al. define consciousness as the historically and socially located and

constructed meanings formed in people's interactions with each other and their institutions. This shared consciousness or "symbolic universe" encompasses interrelated cognitive and normative dimensions, an organization of knowledge and an orientation toward knowledge and action. The organization of knowledge and orientation derived from technological production and political bureaucracy carry over into other areas of life, including education, to form modern technological-bureaucratic consciousness. This "symbolic universe of modernity," consisting of a "network of cognitive and normative definitions of reality," provides a common "frame of reference shared by most members of a society" (pp. 108-109).

Among the major themes of the symbolic universe of modernity delineated by Berger et al. (1973) are: functional or technical rationality, componentiality, makeability, and progressivity derived from technological production; and orderliness and taxonomization derived from political bureaucracy. Each of these themes can be seen to make the myths of thinking skills, the right answer, and stages and styles plausible in the curriculum context.

Technical rationality represents the generalization of an engineering mentality to the manipulation of cognitive and social as well as material objects. It carries assumptions of machine-like functioning, reproducible linear process (e.g., interchangeable parts in assembly line production), and

measurability of output. Technical rationality is also dependent upon the assumption of componentiality, i.e., that "everything is analyzable into constituent components, and everything can be taken apart and put together again in terms of these components" (Berger et al., 1973, p. 27). These components are seen as "self-contained units" that are "interdependent in a rational, controllable and predictable way" (p. 27). Clearly, both thinking and curriculum have been deeply affected by the widespread adoption of technical rationality in American life, and not surprisingly, a skills approach to teaching thinking has been incorporated into curriculum discourse and practice.

The theme of makeability follows from technical rationality and componentiality. It refers to a "tinkering attitude" and a "problem-solving inventiveness" (Berger et al., (1973, p. 30) that seeks to maximize output or results, usually on criteria of quantity or cost-effectiveness. Progressivity refers to "an 'onward and upward' view of the world" (p. 113) that expects and favors continuing change and improvement. It can be seen as underlying and reinforcing the makeability theme and contributing to the plausibility of the myths of thinking skills and developmental stages.

From political bureaucracy, modern consciousness derives the complementary themes of orderliness and taxonomization. Bureaucracy creates and maintains order and predictability through

rationalized procedures, i.e., normal channels. Bureaucratic systems of procedures are typically "based on a taxonomic propensity" (Berger et al., 1973, p. 49) similar to but more arbitrary than the componentiality of technological production.

Phenomena are classified rather than analyzed or synthesized.

The engineer puts phenomena into little categorical boxes in order to take them apart further or to put them together in larger wholes. By contrast, the bureaucrat is typically satisfied once everything has been put in its proper box.

(p.49)

The myths of the right answer and of stages and styles can be seen to persist in part as a consequence of their congruence with these bureaucratic themes of modern consciousness. They also gain plausibility from themes more specific to the U. S. experience.

The myth of the right answer is also sustained by its compatibility with a Christian religiosity. Compatibility is evident in their shared assumption of known "truth" residing in a sacred text (bible, textbook) as interpreted by authorized experts (clergy, teachers). Further, the desired truths are to be learned by repetition (catechism, drill and practice). Whether in church or in school, youth are to accept, remember, and recite the right answers of their elders.

The myth of stages and styles reflects a particular liberal ideology of individualism as well as the general modern

consciousness. Its assumptions of discrete categories and linearity (e.g., concrete operations are distinct from and precede formal operations) are consonant with technical rationality, componentiality, and taxonomization. The assumption that individuals "have" a particular stage or inherent style reflects not simply attention to individuality but a "possessive individualism," which assumes individuals to be the proprietors of their capabilities and characteristics, owning them much as one might possess an automobile or a green sweater (Popkewitz, 1983, 1985). It is an American conception of the individual that can be traced to early Protestant beliefs in progress, liberal democratic political theory (e.g., the 17th century political philosophy of Locke and the 18th century political economy of John Stuart Mill), and the ideology of laissez-faire capitalism. In the 20th century, it finds expression in psychological approaches to measurement and task analysis intended to further scientific management of schooling for purposes of social efficiency. The compatibility of this conception of individualism with technical rationality and other themes of modern consciousness helps to sustain both and give credence to the myth of stages and styles.

The social functions of myth also contribute to explanation of its persistence. Insofar as particular myths exemplify cultural themes, they not only derive support from those themes but serve to dramatize them as cultural ideals and to orient individual and

collective action toward their realization. Thus, myth becomes an integral, sustaining element of everyday life. It is difficult to imagine, for example, curriculum and teaching stripped of the myth of the right answer. What would school classrooms be like without the recitation and the worksheet?

The cultural cohesion provided by myth is closely related to myth's orienting function. Shared ideals and beliefs offer a feeling of community and a comforting measure of security in that community. Myth also serves to promote the interests of particular subgroups, professional educators in this case. Myths such as those examined here contribute to professional identity and claims to expertise. They contribute to seeming expertise both by providing a language that is incomprehensible to most people outside the profession and by suggesting that professionals have the knowledge and capacity to deal with the problems they have identified. Educators are the official proprietors and interpreters of myths to which the uninitiated have neither direct access nor the right of appeal. Participation in myth-based ritual fosters group solidarity; the myths become symbols of group membership and grounds of moral legitimacy (Durkheim, 1961).

Myth also persists in curriculum discourse and practice because it provides an illusion of explanation that serves to direct action and thereby to justify particular social interests and professional practices. The descriptive-prescriptive function

of myth has already been touched upon. The description that myth offers is often taken as explanation, as if to name or label a phenomena such as cognitive stage or style is to comprehend and perhaps to control it. Upon close examination, however, the illusion of understanding disappears and the tautology emerges. The myth of thinking skills, for example, explains neither the nature nor the development of thought.

The labels and their mythic elaborations do direct practice, for example, the admonition that teachers adapt their teaching and/or expectations for learning to the identified stages and styles of individual students. Myth thus justifies school practices such as ability grouping or tracking; it makes differentiation of students and curriculum seem reasonable and appropriate (Popkewitz, 1985). Myth is perpetuated in part because it supports the political, economic, or cultural interests of groups that are dominant in the wider society, justifying what might otherwise be viewed as discriminatory practices. Myth thereby diverts attention from difficult problems of curriculum and teaching or provides excuses for not attempting to resolve them.

#### **Reconstruction of Myth and Curriculum**

To see the myths of thinking skills, the right answer, and stages and styles in relation to modern consciousness, cultural themes specific to the U.S. experience, and the historical social functions of myth is to begin to understand the social construction

and persistence of myth in curriculum discourse and practice. If curriculum is to be reconstructed in ways that affirm cultural ideals, the limits of both our conceptions of curriculum and our guiding myths must be recognized and challenged. While socially functional in some respects, myth is also pre-emptive. Myth serves to obscure as well as illuminate, to impede as well as generate thought and action. Reconstruction of myth and curriculum requires moving beyond prevailing conceptions to consider or create alternatives.

This is not to call for the exorcism of myth. To do so would be futile, for myth is integral to social life. Myth is probably inevitable, and not all myths are pernicious. In curriculum, our myths need not obscure social conditions that impede school learning by psychologizing or otherwise masking them. Neither need they foster practices contrary to espoused purposes. Instead of limiting students' opportunities, our myths might expand possibilities for all students and means of their attainment.

The particular myths examined here are neither neutral nor inevitable. They have been created out of U.S. history and culture and the particular experiences and interests of professional educators and researchers within that context. As myths become incorporated into the everyday language and practice of curriculum, however, their original purposes and underlying values are gradually lost, and the myths acquire a universal quality that

tends to deter challenge. We ought not to be so intimidated.

Consider, for example, possible alternatives to prevailing technocratic conceptions of curriculum and rational management models of curriculum making (Cornbleth, 1985b, 1985d). Typically, curriculum is taken to be a tangible product such as a document or plan to guide classroom teaching and learning, and curriculum making is seen as a technical project in which one follows a predetermined set of procedures to develop the curriculum product. The step-by-step development procedures imply that curriculum is composed of discrete components (e.g., objectives, subject matter, content, materials) that can be separately constructed, often in a linear sequence, and then assembled to make a coherent curriculum product. The procedures, which are intended to provide rational, i.e., efficient, management and control of development resources and activities once curriculum policy decisions have been made by others, are assumed to be value neutral, without social, political, or ethical consequences. Curriculum making, thus conceived as a technical project of efficiently managing resources to produce a tangible product, gives the appearance of being scientific and conveys images of efficiency, effectiveness, and benevolence.

While questions have been raised regarding the viability of the technocratic conception of curriculum and rational management models of curriculum making as well as their underlying assumptions of objectivity or value neutrality (Cornbleth, 1985b), a technical

project view of curriculum persists largely for the same reasons as the previously discussed myths. It is compatible with modern consciousness and U.S. experience, and it is socially functional in that context. Not surprisingly, a technocratic approach to curriculum and myths such as thinking skills, stages and styles, and the right answer are mutually reinforcing.

An alternative conception of curriculum that is less supportive of such myths is a social process view (Cornbleth, 1985b). Here, curriculum construction is conceived as an ongoing social activity that is shaped by various contextual influences within and beyond the classroom and accomplished interactively by teachers and students. Curriculum is not a discrete, tangible product but the actual, day-to-day classroom interactions of students, teachers, ideas, and materials. The curriculum is the curriculum-in-use. Planning documents are seen as one aspect of the context that shapes curriculum-in-use.

In contrast to the technocratic view, a social process approach does not separate curriculum policymaking, construction, and implementation. Instead of assuming or prescribing a linear sequence of discrete events, a social process view assumes a dynamic, interactive relationship among policy, planning, enactment, and their sociocultural context, i.e., curriculum is constructed and reconstructed in practice. A social process conception of curriculum and its construction is less hospitable to

the myths of thinking skills, stages and styles, and right answers than is the technocratic view. A social process conception would be supportive of constructivist notions of thinking, individuality, and learning, i.e., reconstruction of persistent myths.

The reconstruction of myth, however, is neither simple nor straightforward. Not only does it require modification of curriculum beliefs and accompanying practices, but also concomitant modification of the institutional conditions that sustain modern consciousness. Such change is not without precedent, and countermodernizing trends are now evident in other institutional sectors; examples include modifications of assembly line and business management practices and the revival of "wholistic" medicine. The challenge is to cultivate skepticism and a critical stance that renders both myth and institutional arrangements fragile and susceptible to reconstruction.

#### Notes

1. Also, whereas ancient myths tended to be anthropomorphic, witness Zeus, for example, the myths of the 20th century are more likely to be "mechanomorphic" (Toulmin, 1982, p. 24).
2. Elaboration of the arguments and evidence provided here can be found in Cornbleth (1985a, pp. 18-32).
3. A related development contributing to the redefinition of thinking as skills was the refinement of mental measurement and statistical analysis techniques, especially the work of Thorndike

(e.g., his 1904 Theory of Mental and Social Measurements), Terman (the 1916 Stanford-Binet intelligence test with its multiple sub-tests), and Thurstone (his work in factor analysis in the 1930s). By the 1930s, a differentiated rather than a unitary view of intelligence predominated, compatible with a component skills view of thinking.

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